

L Number	Hits	S arch Text	DB	Tim stamp
-	15753	application adj program\$4 adj int rfac	USPAT; US-P PUB; EPO; JPO; DERWENT; IBM_TDB	2004/03/11 11:44
-	30774	automatic\$4 with (backup or back-up or recover\$6 or restor\$6 or (back adj1 up))	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/03/11 12:37
-	23053	execut\$6 near2 state\$	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/03/11 11:45
-	0	(application adj program\$4 adj interface) same (automatic\$4 with (backup or back-up or recover\$6 or restor\$6 or (back adj1 up))) same (execut\$6 near2 state\$)	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/03/11 11:28
-	97	(application adj program\$4 adj interface) and (automatic\$4 with (backup or back-up or recover\$6 or restor\$6 or (back adj1 up))) and (execut\$6 near2 state\$)	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/03/11 11:28
-	10	(application adj program\$4 adj interface) same (automatic\$4 with (backup or back-up or recover\$6 or restor\$6 or (back adj1 up)))	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/03/11 11:29
-	0	((application adj program\$4 adj interface) same (automatic\$4 with (backup or back-up or recover\$6 or restor\$6 or (back adj1 up)))) and (execut\$6 near2 state\$)	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/03/11 11:29
-	39	(application adj program\$4 adj interface) same (execut\$6 near2 state\$)	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/03/11 11:29
-	0	((application adj program\$4 adj interface) same (execut\$6 near2 state\$)) and (automatic\$4 with (backup or back-up or recover\$6 or restor\$6 or (back adj1 up)))	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/03/11 11:29
-	14	((application adj program\$4 adj interface) same ( x cut\$6 n ar2 stat \$)) and (backup or back-up or r c ver\$6 or r stor\$6 r (back adj1 up))	USPAT; US-P PUB; EPO; JP ; DERWENT; IBM_TDB	2004/03/11 11:31

	34069	(application adj program\$4 adj interface) or API	USPAT; US-P PUB; EP ; JP ; DERWENT; IBM_TDB	2004/03/11 11:44
	13338	x cut\$6 near1 stat \$	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/03/11 11:45
	14992	(backup or back-up or recover\$6 or restor\$6 or (back adj1 up)) near2 (program\$ or software or application)	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/03/11 11:47
	70	((application adj program\$4 adj interface) or API) and (execut\$6 near1 state\$) and ((backup or back-up or recover\$6 or restor\$6 or (back adj1 up)) near2 (program\$ or software or application))	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/03/11 11:48
	0	((application adj program\$4 adj interface) or API) same (execut\$6 near1 state\$) same ((backup or back-up or recover\$6 or restor\$6 or (back adj1 up)) near2 (program\$ or software or application))	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/03/11 11:48
	17008	((application adj program\$4 adj interface) or API) same e ((backup or back-up or recover\$6 or restor\$6 or (back adj1 up)) near2 (program\$ or software or application))	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/03/11 11:49
	123	((application adj program\$4 adj interface) or API) same ((backup or back-up or recover\$6 or restor\$6 or (back adj1 up)) near2 (program\$ or software or application))	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/03/11 11:49
	1	((application adj program\$4 adj interface) or API) same ((backup or back-up or recover\$6 or restor\$6 or (back adj1 up)) near2 (program\$ or software or application))) and (execut\$6 near1 state\$) automatic\$4 adj2 recover\$4	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/03/11 11:49
	3569		USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/03/11 11:51
	124	(automatic\$4 adj2 recover\$4) same restor\$6	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/03/11 11:52

	1	((aut matic\$4 adj2 recov r\$4) same rest r\$6) and ((application adj program\$4 adj int rfac ) r API)	USPAT; US-P PUB; EP ; JP ; DERWENT; IBM_TDB	2004/03/11 12:14
	136	(automatic\$4 adj2 r c v r\$4) and (application adj program\$4 adj interface)	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/03/11 12:14
	0	((automatic\$4 adj2 recover\$4) same restor\$6) and (application adj program\$4 adj interface)	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/03/11 12:15
	78	(automatic\$4 adj2 recover\$4) and restor\$6 and (application adj program\$4 adj interface)	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/03/11 12:19
	18	((automatic\$4 adj2 recover\$4) and restor\$6 and (application adj program\$4 adj interface)) and (714/\$).ccls.	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/03/11 12:16
	32	(automatic\$4 adj2 recover\$4) and (restor\$6 adj2 (program or software or application))	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/03/11 12:40
	4	((automatic\$4 adj2 recover\$4) and (restor\$6 adj2 (program or software or application))) and (application adj program\$4 adj interface)	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/03/11 12:21
	3734	(backup or back-up or (back\$4 adj1 up)) near2 (software\$ or program\$ or application\$)	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/03/11 12:57
	196	((backup or back-up or (back\$4 adj1 up)) near2 (software\$ or program\$ or application\$)) and (restor\$6 adj2 (program or software or application))	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/03/11 12:40
	9526	(hardware or execut\$6) adj1 state\$	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/03/11 12:41

	1	((((backup r back-up r (back\$4 adj1 up)) near2 (software \$ r program\$ r application\$)) and (restor\$6 adj2 (program r software r application))) and (application adj program\$4 adj int rfac )) and ((hardware or x cut\$6) adj1 state\$)	USPAT; US-P PUB; EP ; JP ; DERWENT; IBM_TDB	2004/03/11 12:42
	16	((backup or back-up or (back\$4 adj1 up)) near2 (software\$ or program\$ or application\$)) and (restor\$6 adj2 (program or software or application))) and (application adj program\$4 adj interface)	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/03/11 12:56
	1		USPAT	2004/03/11 12:54
	1		USPAT	2004/03/11 12:54
	1		USPAT	2004/03/11 12:55
	1		USPAT	2004/03/11 12:55
	1		USPAT	2004/03/11 12:55
	1		USPAT	2004/03/11 12:55
	1		USPAT	2004/03/11 12:55
	20539	restor\$6.ti.	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/03/11 12:58
	113580	recover\$6.ti.	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/03/11 12:58
	17718	(backup or back-up or (back\$4 adj1 up)).ti.	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/03/11 12:58
	0	restor\$6.ti. and recover\$6.ti. and ((backup or back-up or (back\$4 adj1 up)).ti.) and (application adj program\$4 adj interface)	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/03/11 12:58
	112780	restor\$6.ab.	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/03/11 12:58
	327436	r c v r\$6.ab.	USPAT; US-P PUB; EP ; JPO; DERWENT; IBM_TDB	2004/03/11 12:58

-	<b>49561</b>	<b>(backup r back-up r (back\$4 adj1 up)).ab.</b>	<b>USPAT; US-P PUB; EPO; JP ; DERWENT; IBM_TDB</b>	<b>2004/03/11 12:59</b>
-	<b>53855</b>	<b>(application adj program\$4 adj int rface) and restor\$6.ab. and recover\$6.ab. and ((backup or back-up or (back\$4 adj1 up)).ab.)</b>	<b>USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB</b>	<b>2004/03/11 12:59</b>
-	<b>4</b>	<b>(application adj program\$4 adj interface) and restor\$6.ab. and recover\$6.ab. and ((backup or back-up or (back\$4 adj1 up)).ab.)</b>	<b>USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB</b>	<b>2004/03/11 13:01</b>
-	<b>2</b>	<b>(registry or catalog) and ((application adj program\$4 adj interface) and restor\$6.ab. and recover\$6.ab. and ((backup or back-up or (back\$4 adj1 up)).ab.))</b>	<b>USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB</b>	<b>2004/03/11 13:03</b>
-	<b>30</b>	<b>(registry or catalog) and recover\$6.ab. and ((backup or back-up or (back\$4 adj1 up)).ab.)</b>	<b>USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB</b>	<b>2004/03/11 13:03</b>
-	<b>4</b>	<b>((registry or catalog) and recover\$6.ab. and ((backup or back-up or (back\$4 adj1 up)).ab.)) and ((application adj program\$4 adj interface) or API)</b>	<b>USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB</b>	<b>2004/03/11 13:04</b>

US-PAT-NO: 5559958

DOCUMENT-IDENTIFIER: US 5559958 A  
\*\*See image for Certificate of Correction\*\*

TITLE: Graphical user interface for computer management system and an associated management information base

----- KWIC -----

Detailed Description Text - DETX (4):

Installed at the manager console 12 is shell software having a suitable management platform 15, for example, an application process interface (or "API") for the operation of the management application 16. For example, Microsoft Windows would be a suitable platform 15 from which the management application 16 may be launched. In one embodiment of the invention, the management application 16 may coexist with Netware Management System (or "NMS") software manufactured by Novell, Inc., Openview network manager software manufactured by Hewlett Packard or another third party network management systems. For example, it is specifically contemplated that the management application 16 may be launched from Novell's NetWare Management Map focussed on a selected server. Alternately, the management application 16 may operate independent from the NetWare Management System products if the file server 10 is running NetWare v.3.11 or higher.

Detailed Description Text - DETX (89):

Having selected the secondary logical drive or accepted the default primary logical drive for viewing, at step 248, the network administrator may then view the logical drive. Information displayed in the information block 562 of the internal IDA logical drive GUI 556 for the selected logical drive are status, fault tolerance, auto-reliability, rebuild blocks, accelerator board and capacity. Status is a monitored item which indicates the status of the logical drive and may be in one of the following states: OK, failed, unconfigured,

recovering, ready rebuild, rebuilding, wrong drive, bad connect, overheating and shutdown. Of these, OK indicates that the logical drive is in normal operation mode, failed indicates that more physical drives have failed than the fault tolerance mode of the logical drive can handle without data loss, unconfigured indicates that the logical drive is not configured, recovering indicates that the logical drive is in an interim recovery mode where at least one physical drive has failed but the logical drive's fault tolerance mode lets the drive continue to operate with no data loss, ready rebuild indicates that the logical drive is ready for automatic data recovery and that the physical drive that failed has been replaced but the logical drive is still operating in interim recovery mode, rebuilding indicates that the logical drive is doing automatic data recovery during which fault tolerance algorithms restore data to the replacement drive, wrong drive indicates that the wrong physical drive was replaced after a physical drive failure, bad connect indicates that a physical drive is not responding, overheating indicates that the drive array enclosure that contains the logical drive is overheating, and shutdown indicates that the drive array enclosure that contains the logical drive has overheated and that the logical drive is no longer functioning.

US-PAT-NO: 6065123

DOCUMENT-IDENTIFIER: US 6065123 A

TITLE: Computer system with unattended on-demand availability

----- KWIC -----

Brief Summary Text - BSTX (12) :

Furthermore, as computer systems become more integrated into users' lives, it would be beneficial to provide a computer system which is tolerant of software and power failures. That is, a computer system which automatically recovers itself after a software application crashes or a power failure occurs.

Detailed Description Text - DETX (28) :

User applications 185 include any of a wide variety of conventional software applications which are executable on a computer system. User applications 185 call InstantON servicing agent 140 directly using application programming interface (API) procedure calls, as discussed in more detail below. A user application 185 can call InstantON servicing agent 140, for example, in order to store checkpoint data or to indicate the system should be placed in Standby mode, as discussed in more detail below.

Detailed Description Text - DETX (128) :

Additionally, the software timers utilized by the present invention are not operational when the system is in Standby mode. When the system resumes operation from Standby mode, InstantON servicing agent 140 updates the software timers to reflect the amount of time which the system spent in Standby mode. Thus, bringing the system out of Standby mode prior to the time the scheduled action is to occur provides InstantON servicing agent 140 with sufficient time to restore the software timers to their proper values.

US-PAT-NO: 5319774  
DOCUMENT-IDENTIFIER: US 5319774 A  
TITLE: Recovery facility for incomplete sync points for distributed application

----- KWIC -----

Brief Summary Text - BSTX (26) :

A general object of the present invention is to provide an automatic recovery facility to complete failed sync points in systems that support multiple execution environments.

Brief Summary Text - BSTX (29) :

It is a further object of the present invention to extend the automatic recovery facility to support an open-ended set of resources and resource managers, and to support the recovery of participating resource managers without requiring operator or administrator involvement, except for extended outages.

Detailed Description Text - DETX (11) :

When application 56A within distributed application environment 52A desires to update files 78A and 78B, application 56A makes two separate update requests via a file application program interface within application 56A. The requests invoke protected resource adapters (henceforth called protected file adapter for this type of resource) 62A and 62B respectively for files 78A and 78B (step 500 of FIG. 3). Based on resource manager specific implementation, the protected file adapter knows the file is protected. If not already registered with the syncpoint manager for the work unit, protected file adapters 62A and 62B register with syncpoint manager 60A the fact that they want to be involved in all Commit/Backout requests for this work unit (step 502). A "work unit" is a grouping of all resources, directly accessible and visible by the application, that participate in a sync point. It is generally associated with a logical unit of work identifier. For a further explanation of work units, see Local and Global Commit Scopes Tailored to Work Units below. Then

protected file adapters 62A and 62B contact their respective resource managers 63A and 63B to update files 78A and 78B (Step 504). Return is made to application 56A. Next application 56A requests a syncpoint 58A, i.e. a commit in this case, to syncpoint manager 60A (Step 506). In response, syncpoint manager 60A initiates a two-phase commit procedure (step 508) to be carried out for both of its registered resources, files 78A and 78B, represented by protected file adapters 62A and 62B and their respective resource managers 63A and 63B. In step 508, syncpoint manager 60A calls each of its registered resources at the adapter exit syncpoint exit entry point, given to the syncpoint manager by each resource adapter during registration, with a phase one "prepare" call.

Detailed Description Text - DETX (17):

Application 56A gets control with the indication that the request to start was successfully sent by communication facility 57A. At this point application 56A is able to send requests to application 56D and application 56A sends a request to application 56D over the established conversation. In this illustrated example, this request eventually causes application 56D to invoke a file application program interface to update file 78D. As described above, the update request causes protected file adapter 62D to register with syncpoint manager 60D under the same work unit (previously assigned for application 56D (Step 532) when application 56D was started) (Step 533). Also in step 533, application 56D sends a reply to application 56A over the conversation indicating that it completed its work. Next, application 56A issues update requests for files 78A and 78B. As previously described, protected file adapters 62A and 62B had previously registered with syncpoint manager 60A and they each contact resource managers 63A and 63B to perform the updates (Steps 533 and 533A).

Detailed Description Text - DETX (152):

Exchange of log names is also required between recovery facilities and resource managers of protected resources such as shared files or databases. Unlike protected conversations, where exchange of log names is not necessary when conversations take place in the same system (since they share a

common sync point log), log name exchange is necessary for participating resource managers, even where resource managers are in the same system as the initiating application, because resource managers maintain their own sync point logs. Unlike protected conversations, which may utilize a communication protocol for establishing protected conversations and log name exchange as described by System Network Architecture LU 6.2 cited above, protected resources utilize non-protected conversations and a private message protocol for those functions. Also, for protected resources, it is not practical in all cases to centrally intercept initial communications to the resource manager by using a communication facility as the interceptor because the communications do not in all cases proceed through a communications facility. One example of this is the case of a resource manager 63A FIG. 2 that is in the same system 50A as the application environment 52A and application 56A that uses its resource. This situation does not require conversations with the resource to pass through the communications facility, but instead supports conversations through the conversation manager 53A or other local facilities. Another reason is to afford the flexibility of supporting resource managers without requiring them to entirely change their method of communication with the users of their resource in order to conform to the System Network Architecture LU6.2 communication protocols. Automatic recovery processing from a sync point failure requires that the names of the various participant's logs remain the same as they were before the sync point began, as was the case for protected conversations described above.

Detailed Description Text - DETX (160):

2. object.sub.-- recovery resource, identified by an object.sub.-- recovery resource identifier, which is a resource manager log 800 and supporting procedures for cooperating with a recovery facility 70 in the recovery from a failed sync point procedure. This identifier is used by a recovery facility 70 at the time of recovering from a failed sync point to establish a conversation with the manager of the resource 63 to exchange log names and complete the sync point as a part of automatic recovery.

Detailed Description Text - DETX (181) :

When application 56A FIG. 23 requests a sync point from sync point manager 60A, sync point manager 60A sends the above object.sub.-- recovery resource identifier and object resource identifier to recovery facility 70A where it is stored in sync point log 72A1 along with the information describing the state in the sync point process. If a failure occurs during a sync point, recovery facility 70A is activated to perform the operations necessary to complete the sync point procedure. If resources were participating in the failing sync point, recovery information in the associated recovery facility's sync point log entry is available to permit contact with those resources in order to accomplish recovery. For example, if application 56A goes down during a two-phase commit operation, then recovery facility 70A is activated and subsequently exchanges log names with resource manager 63A. When this second exchange indicates that log names have not changed since the sync point was initiated, recovery facility 70A knows that it can continue with the recovery of the sync point. A log name mismatch in the exchange would indicate that log information required for automatic recovery has been lost and therefore automatic recovery should not be attempted. The recovery facility 70A initiates the second log name exchange and asks resource manager 63A what state or phase it was in prior to the failure. Even though the initial exchange of log names was initiated by resource manager 63A, as described above, the exchange of log names required after the failure is initiated by recovery facility 70A as follows:

Detailed Description Text - DETX (194) :

Recovery Facility 70A illustrated in FIG. 2 is used to complete a sync point that encounters a failure. In most cases the recovery (resynchronization) is accomplished automatically by a Recovery Facility 70A, which recognizes the failure and then acts as a surrogate for the local sync point manager 60A to complete the sync point normally through alternate or reacquired communications to participants in the sync point. Failures include a failing sync point

manager 60A, a failure in communications between a sync point manager 60A and its recovery facility 70A, failure of communications with or failure of an application partner 56D or resource manager 63, and failure of the recovery facility 70A.

Detailed Description Text - DETX (203) :

Prior to a sync point occurrence there must be agreement between the participants in the sync point concerning the identity of the logs associated with the sync point and the current level of their respective logs 72. (Refer to the foregoing section entitled "Log Name Exchange For Recovery of Protected Resources"). This pre-sync point recovery agreement is important in case of a sync point failure to ensure that the logs used to recover from the sync point failure are the same ones and are at the same level as they were before the sync point was initiated. If, between the time of the pre-sync point recovery agreement (exchange of log names described above) and the occurrence of a sync point failure, one or more of the participants has a log failure and must begin with a new log, then the automatic recovery procedures associated with the failing log will fail.

Detailed Description Text - DETX (205) :

The recovery facility 70 provides automatic recovery from sync point failure and includes Step 303--the various events that may occur to initiate the recovery procedure, Step 304--the initialization of the recovery process, and Step 305--the actual recovery, referred to as a recovery driver process, and Step 306--the termination of the recovery procedure. The recovery facility 70 includes asynchronous handling of multiple sync point failure events.

Detailed Description Text - DETX (211) :

(5) A recovery administrative request event 315 results from an administrative command that is used to repair sync point failures that have encountered prolonged delays or serious failures during the normal, automatic recovery procedure. The request manually supplies response state information that is normally available through automatic recovery protocols. The appropriate response state information is determined off-line from

manual investigation of sync point log records. The appropriate response data (state information) is determined by administrators from manual investigation of sync point log records.

Detailed Description Text - DETX (281) :

1. The data structures from the recovery facility log records representing the status of the syncpoint operation are restored if the system failed where this recovery facility operates. From these data structures, the recovery facility can (in other embodiments the recovery facility might be called the syncpoint manager because one facility performs both syncpoint and recovery processing) determine the resources for which it is responsible for initiating recovery. If the recovery occurs without a system failure, it is not necessary to restore information from the log because the data structures written during syncpoint used by the recovery facility are still intact.

Current US Original Classification - CCOR (1) :

714/20